ABSTRACT OF THE DISCLOSURE

A motor power supply having an inrush current protection mode, a motor drive mode, an overvoltage protection mode, and a dynamic braking mode. In the inrush protection mode, a first resistance limits an inrush current to a capacitor which smoothes a rectifier output to provide DC power to an inverter during the motor drive mode. In the overvoltage protection mode, the first resistance is used in conjunction with a switching element to controllably discharge an overvoltage which may occur across the capacitor due to regenerated energy from the motor passing back through the inverter. During the drive mode, the inverter input is connected with the DC power and during the dynamic braking mode, the inverter input is connected with a second resistance which dissipates the energy regenerated by the motor. A controller controls a multi-contact relay and the switching element to implement the various modes of operation.